



ENVIRONMENTAL HEALTH & SAFETY FACT SHEET:
HUMAN CELL LINE SAFETY



Human cell lines are commonly used in biomedical research, yet appropriate biosafety requirements for handling human cell lines are often subject to debate within the scientific community.

In 1991, the Occupational Safety and Health Administration (OSHA) issued the Bloodborne Pathogens (BBP) Standard to protect employees who have occupational exposure to human blood or other potentially infectious materials. While human blood, most body fluids, unfixed human tissues and organs were clearly included within the scope and application of the standard, the inclusion of human cell lines was ambiguous.

In 1994, OSHA issued an interpretation of the applicability of the BBP Standard towards human cell lines. According to the interpretation, human cell lines are considered to be potentially infectious and within the scope of the BBP Standard unless the specific cell line has been characterized to be free of hepatitis viruses, HIV, Epstein-Barr virus, human papilloma viruses and other recognized bloodborne pathogens. In alignment with this interpretation, the American Type Culture Collection (ATCC) recommends that all human cell lines be accorded the same level of biosafety consideration as a line known to carry HIV. Moreover, the 5th Edition of the CDC publication, Biosafety in Microbiological and Biomedical Laboratories (BMBL), recommends that human and other primate cells should be handled using Biosafety Level 2 (BSL2) practices and containment.

In consideration of the aforementioned regulatory interpretation and consensus guidelines and other factors, UMass Amherst's Institutional Biosafety Committee has adopted the following guidance regarding use of human cell lines:

Unless the researcher has *documentation* of screening for bloodborne pathogens, all cell and organ cultures of human/NHP origin including established cell lines shall be handled in accordance with the OSHA Bloodborne Pathogens Standard and under Biosafety Level 2 (BSL2) containment and practices. Existing and future university laboratory safety policies should reflect this guidance.

[OSHA Letter of Interpretation](#)

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